

## ABSTRACT

A circuit of a scanner to perform a color space conversion on an RGB signal.

The circuit has several sampling-amplified-offset devices to sample, amplify and compensate potential of an R charge signal, a G charge signal and a B charge signal to obtain an R analog signal, a G analog signal and a B analog signal. The circuit further has a gain adder to multiply the corresponding weighted gain with the R analog signal, the G analog signal and the B analog signal. The multiplication results are then summed up to obtain an addition analog signal. A multiplexer is also included to select between the R analog signal, the G analog signal, the B analog signal and the addition analog signal for output.